

Serial No. 10/809,351

IN THE SPECIFICATION:

The specification as amended below with replacement paragraphs shows added text with underlining and deleted text with ~~striketrough~~.

Please REPLACE the paragraph beginning at page 4, paragraph 0028, with the following paragraph:

These and/or other aspects and advantages of the invention will become apparent, and more readily appreciated from the following description of the embodiments, taken in conjunction with the accompany drawings of which:

FIG. 1 schematically illustrates a conventional robot system according to which the location of a mobile robot is determined through the use of a beacon;

FIG. 2 is a block diagram of a robot system according to an aspect of the present invention;

FIGS. 3A, 4A and 5A are perspective views of a transmitter mounted to the beacon according to an aspect of the present invention;

FIGS. 3B, 4B and 5B illustrate that the transmitter rotates at phase angles within an allowable rotation angle in when the transmitter is mounted to the beacon according to an aspect of the invention;

FIG. 6A is a perspective view of the beacon that uses a single sided mirror according to an aspect of the present invention;

FIG. 6B illustrates ~~that the transmitter~~ the single-sided mirror ~~rotatinges~~ at phase angles within an allowable rotation angle when the ~~transmitted-mirror~~ is mounted to the beacon of FIG. 6A;

FIG. 7A is a perspective view of the beacon that uses a double sided mirror according to an aspect of the present invention;

FIG. 7B illustrates ~~that the transmitter~~ the double-sided mirror ~~rotatinges~~ at phase angles within an allowable rotation angle when the ~~transmitted-mirror~~ is mounted to the beacon of FIG. 7A;

FIG. 8 is a perspective view of a mobile robot having a receiving part according to an aspect of the present invention;

FIG. 9A is a perspective view of the mobile robot comprising a receiver including a conical mirror according to an aspect of the present invention;

FIGS. 9B is an enlarged perspective view of the receiver having the conical mirror mounted to the mobile robot;

FIG. 10 illustrates a plurality of beacons in a situation where a moving path of the mobile robot includes a dead angle according to an aspect of the present invention; and

FIG. 11 schematically illustrates an operation to calculate the location of the mobile robot relative to the beacon based on the phase information according to an aspect of the present invention.

Please REPLACE the following paragraph inserted after page 9, paragraph 0056, with the following paragraph:

As shown in FIGS. 6B and 7B, each ~~transmitter 11~~mirror 13, 15 rotates at the phase angles within the allowable rotation angle depicted in FIGS. 6A and 7A, respectively.